



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/451,965      | 11/30/1999  | ROBERT F. SENZIG     | 15-CT-4697          | 9713             |

7590 07/27/2005

JOHN S BEULICK  
ARMSTRONG TEASDALE LLP  
ONE METROPOLITAN SQUARE  
SUITE 2600  
ST LOUIS, MO 631022740

|          |
|----------|
| EXAMINER |
|----------|

SONG, HOON K

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2882

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/451,965

Applicant(s)

SENZIG ET AL.

Examiner

Hoon Song

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 18-25, 29, 34, 35, 37-39 and 41-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-25, 29, 34, 35 and 37-39 is/are allowed.
- 6) ☒ Claim(s) 41-43 is/are rejected.
- 7) ☒ Claim(s) 44 and 45 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/1/2005 has been entered.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 41 and 43 are rejected under 35 U.S.C. 102(e) as being anticipated by Barni et al. (US 5841830).

Regarding claim 41, Barni teaches a method of generating an image of an object using a multimode (CT and fluoro) imaging system configured to operate in a plurality of modes of operation, said method comprising

operating the imaging system in a 3-D image mode to generate a 3-D image (column 4 line 8-12) and then operating the imaging system in an x-ray fluoro mode to generate a plurality of images taken at different angles relative to the object (column 4

line 37-42) and using the generated plurality of images to locate a desired element in three dimensions in the 3-D image (column 5 line 10-27).

Regarding claim 43, Barni teaches said generating a plurality of images in said x-ray fluoro mode comprises angularly translating an x-ray source of the imaging system relative to the object (column 5 line 10-27).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barni in view of Fujita et al. (US 5848126).

Regarding claim 42, Barni teaches said generating a plurality of images in said x-ray fluoro mode comprises locating the desired element within the object and determining depth information from multiple x-ray fluoro images taken at different angles.

However Barni fails to teach translating an x-ray source of the imaging system along a z-axis of the object.

Fujita teaches a movable CT gantry translating an x-ray source of an imaging system along a z-axis of an object (figure 23a).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the CT gantry of Barni with the movable gantry as taught by Fujita,

since the movable gantry would provide better imaging by preventing/minimizing patient movement.

***Allowable Subject Matter***

Claims 18-25, 29, 34-35 and 37-39 are allowed over prior art.

Claims 44-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 18-25, 29 and 34-35, the prior art fails to teach a multimode CT system having a first detector panel and a second detector panel and the system is configured to angularly position the first detector panel relative to the second detector panel at least one of acutely or perpendicularly as claimed in independent claim 18.

Regarding claims 37-39, the prior art fails to teach a method of generating improved image by configuring a multimode imaging system to generate images in a first and second mode of operation, wherein at least one the mode of operation is fluoro mode and separate images of the object are generated using respective detector panels that are angled with respect to one another and wherein the multimode imaging system is configured to determine a location of desired elements in the separate images as claimed in independent claim 37.

Regarding claims 44-45, the prior art fails to teach said generating a plurality of images in said x-ray fluoro mode comprises utilizing angled detector panels to generate

separate x-ray fluoro images, determining a location of the desired element within the separate x-ray fluoro images, and utilizing triangulation from the determined location of the desired element within the separate x-ray images to determine a location of the desired elements in the 3-D image as claimed in dependent claim 44.

***Response to Arguments***

Applicant's arguments with respect to claims 41-43 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
DAVID V. BRUCE  
PRIMARY EXAMINER

Application/Control Number: 09/451,965

Page 6

Art Unit: 2882

HKS

7121105

HKS